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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/583,118

06/16/2006

Tobias Kresse

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07/09/2008

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EXAMINER

HIGGINS, GERARD T

ART UNIT

PAPER NUMBER

1794

MAIL DATE

DELIVERY MODE

07/09/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/583,118	Applicant(s) KRESSE ET AL.	
	Examiner GERARD T. HIGGINS	Art Unit 1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 May 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) 9-17 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 June 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>06/16/2006</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of Group I, claims 1-8 in the reply filed on 05/07/2008 is acknowledged. The traversal is on the ground(s) that the Examiner has not shown distinctness between the groupings. This is not found persuasive because the use of the thermal treatment in Group II is to specifically afford writing onto the data storage device, while Group I only states that transmission and reflection may be varied using thermal treatment. Group I does not state that data is written using said thermal treatment; furthermore, the International Search Report shows that all of the special technical features of applicants' claim 1 were known in the art, and therefore there is no special technical feature that defines the invention over the prior art. This therefore means the inventions lack unity.

The requirement is still deemed proper and is therefore made FINAL.

2. Claims 9-17 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 05/07/2008.

Priority

3. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

4. The information disclosure statement filed 06/16/2006 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each cited foreign patent document; each non-patent literature publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the information referred to therein has not been considered.

A copy of the Baba et al. reference was acquired by the Examiner and a copy has been included with this office action.

Drawings

5. The drawings are objected to because applicants are referring to the metal layers as part numbers **11** (pg 13, lines 19-21 and 33-36) and **31** (pg 14, line 6), while they appear to be part numbers **12** and **32**, respectively. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing

should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

6. The use of the trademark BLU-RAY DISC has been noted in this application. It should be capitalized wherever it appears and be accompanied by the generic terminology.

Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner which might adversely affect their validity as trademarks.

7. The disclosure is objected to because of the following informalities:

a. On page 4, line 32 “reflection (reflection)” appears to be redundant.

b. With regard to the pulse durations on page 10, lines 26-33, are these the pulsed laser experiments used to generate the data of Figures 2 and 3? This information is not set forth in the Figures.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. Claims 1-8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With regard to claim 1, a broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. See MPEP § 2173.05(c). Note the explanation given by the Board of Patent Appeals and Interferences in *Ex parte Wu*, 10 USPQ2d 2031, 2033 (Bd. Pat. App. & Inter. 1989), as to where broad language is followed by "such as" and then narrow language. The Board stated that this can render a claim indefinite by raising a question or doubt as to whether the feature introduced by such language is (a) merely exemplary of the remainder of the claim, and therefore not required, or (b) a required feature of the claims. Note also, for example, the decisions of *Ex parte Steigewald*, 131 USPQ 74 (Bd. App. 1961); *Ex parte Hall*, 83 USPQ 38 (Bd.

App. 1948); and *Ex parte Hasche*, 86 USPQ 481 (Bd. App. 1949). In the present instance, claim 1 recites the broad recitations "a reflection layer," "an initial absorption of at least 5%," and "an initial transmission of at least 5%," and the claim also recites "preferably a metal layer," "preferably at least 10%," and "preferably at least 10%," respectively, which are the narrower statements of these ranges/limitations. For the purposes of examination, the Examiner will treat each of the broader recitations.

With further regard to claim 1, it recites the limitation "the other" in the second line of the claim. There is insufficient antecedent basis for this limitation in the claim. It seems as if applicants are leaving open the possibility of multiple storage strata; however, the term "the other" implies that there is only two stratum.

With regard to claims 2-4 and 7, they recite the limitation "metal layer." The Examiner notes that if applicants amend claim 1 to remove "preferably a metal layer" to overcome the above rejection, then claims 2-4 and 7 will be rejected for lack of antecedent basis.

With further regard to claim 4, the term "varied locally" is a relative term which renders the claim indefinite. The term "varied locally" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. It is unclear how local the heating must be to comprise the limitations of the claim.

With final regard to claim 4, a broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is

considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. See MPEP § 2173.05(c). Note the explanation given by the Board of Patent Appeals and Interferences in *Ex parte Wu*, 10 USPQ2d 2031, 2033 (Bd. Pat. App. & Inter. 1989), as to where broad language is followed by "such as" and then narrow language. The Board stated that this can render a claim indefinite by raising a question or doubt as to whether the feature introduced by such language is (a) merely exemplary of the remainder of the claim, and therefore not required, or (b) a required feature of the claims. Note also, for example, the decisions of *Ex parte Steigewald*, 131 USPQ 74 (Bd. App. 1961); *Ex parte Hall*, 83 USPQ 38 (Bd. App. 1948); and *Ex parte Hasche*, 86 USPQ 481 (Bd. App. 1949). In the present instance, claim 4 recites the broad recitation "the physical properties," and the claim also recites "preferably optical properties," which is the narrower statement of the range/limitation.

With regard to claim 5, a broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. See MPEP § 2173.05(c). Note the explanation given by the Board of Patent Appeals and Interferences in *Ex parte Wu*, 10 USPQ2d 2031, 2033 (Bd. Pat. App. & Inter. 1989), as to where broad language is followed by "such as" and then narrow language. The Board stated that this can render a claim indefinite by raising a question or doubt as to whether the feature introduced by such language is (a) merely exemplary of the remainder of the claim, and therefore not

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required, or (b) a required feature of the claims. Note also, for example, the decisions of *Ex parte Steigewald*, 131 USPQ 74 (Bd. App. 1961); *Ex parte Hall*, 83 USPQ 38 (Bd. App. 1948); and *Ex parte Hasche*, 86 USPQ 481 (Bd. App. 1949). In the present instance, claim 5 recites the broad recitation "is stretched," and the claim also recites "preferably biaxially stretched," which is the narrower statement of the range/limitation.

With regard to claims 6-8, the list of materials in each claim is not in the form of a closed group (i.e. A, B, **and** C). As such it is unclear whether there are other materials not included in the lists.

With regard to claim 8, the terms "disk-shaped" and "cylinderlike" are relative terms which render the claim indefinite. The terms "disk-shaped" and "cylinderlike" are not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. It is unclear whether applicants wish to have "a disk" and "a cylinder," and if not, what would constitute "disk-shaped" and "cylinderlike."

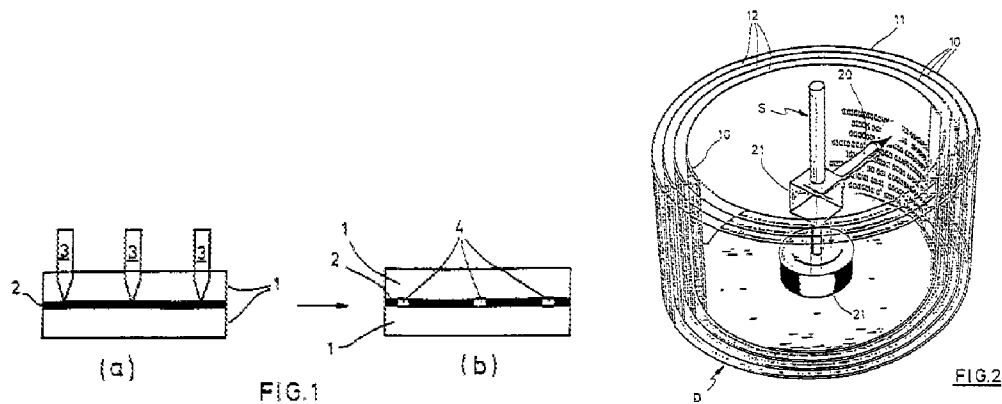
Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lieber et al. (WO 01/04886), of which US 7,054,261 is the US national stage application and will be used herein as a translation, in view of Baba et al. (Applied Optics, Vol. 36, No. 11, 1997).

With regard to claim 1, Lieber et al. disclose the device of Figures 1 and 2.



The device is comprised of a number of storage strata (**10/1** and **12/2**) arranged one on top of another (col. 5, lines 17-34). Each stratum is comprised of an individual plies of a polymer film **10/1** and an adhesion layer **12/2** that is comprised of a dye molecule to allow for further recording of information (col. 1, lines 54-58 and col. 5, lines 35-40). Lieber et al. disclose at col. 6, lines 1-28 and in Figure 1 that the transmission (optical properties) are affected by locally heating either the polymer or the dye in the adhesion layer; specifically, see col. 7, lines 5-14 regarding bleaching of the dyes in the adhesion layer. They also teach that the adhesion layer is acting as a reflection layer at col. 7, lines 15-21; however, Lieber et al. does not teach the specific initial absorption or transmission of the adhesion layer.

Baba et al. disclose write-once optical data storage using large reflectance change metal-island films (Title). They disclose their Figures 1, 3(b), and 6(b).

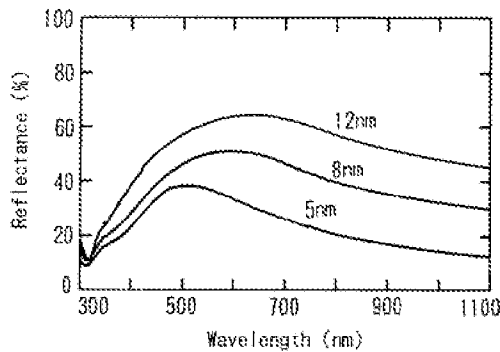


Fig. 1. Typical measured spectral reflectances of Ag island films with mass thicknesses of 5, 8, and 12 nm that were deposited at room temperature.

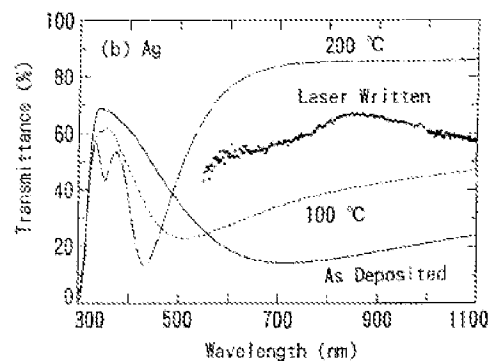
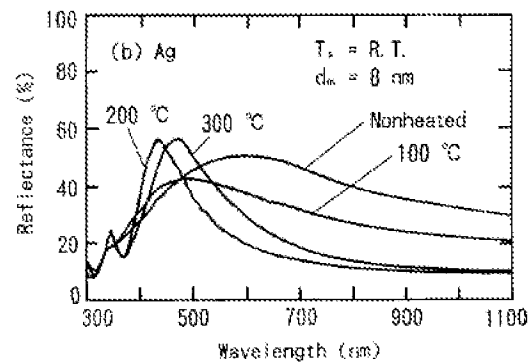


Fig. 6. Measured spectral transmittances of the laser-irradiated regions on 8-nm-thick (a) Cu and (b) Ag island films. The measured spectral transmittances of the island films as deposited and after heating to various temperatures are also shown for reference.

The materials that are being used by Baba et al. (silver) are of the same thickness as suggested by applicants (please see applicants' Figure 1 and pg. 13, lines 13-14 of applicants' specification). These films undergo reflectance and transmission changes in response to thermal deformation and oxidation of the metal islands (pg. 2422, right column and Figure 3(b)). The transmittance of the "As Deposited" film in Figure 6(b) has a transmission of at least 5% at various wavelengths, including approximately 20% at 700 nm. That same film has a reflectance of 50% at 700 nm as seen from Figure 1.

From this information, the Examiner deems that this silver film will intrinsically possess the claimed initial absorption of at least 5% at that same wavelength.

Since Lieber et al. and Baba et al. are both drawn to information recording media, it would have been obvious to one having ordinary skill in the art at the time the invention was made to substitute the adhesion/reflection layer of Lieber et al. with the write-once silver reflection layers of Baba et al. The results of such a substitution would have been known to one of ordinary skill; specifically, a write-once interlayer. The motivation for doing so can be found at pg. 2426 of Baba et al. where they state that these layers show “great potential” as optical storage layers in WO optical disks; further, one of ordinary skill would understand that metal layers would be appropriate in heat-mode type recording structures for acting as a heat source for recording into the adjacent polymer layer.

With regard to claim 2, Baba et al. teach that the transmission and reflection can be varied by heat or laser light (pg. 2421, right column, third paragraph, and also section 4 and Figure 6(b)).

With regard to claim 3, Figure 6(b) shows a transmission in the range of 20 to 90%.

With regard to claim 4, Lieber et al. shows polymer layers **10/1** that are adjacent to the reflection interlayer **12/2** (Figure 2). They teach that recording may be performed locally in the polymer film by heating (col. 6, line 54 to col. 7, line 4).

With regard to claims 5 and 6, Lieber et al. teach preferably using biaxially stretched polypropylene (col. 3, lines 51-54).

With regard to claim 7, Baba et al. teach using gold, silver, copper, and aluminum (Abstract).

With regard to claim 8, Lieber et al. teach the preferential arrangement of the medium at col. 3, lines 55 to col. 4, line 17 (also see Figure 2 and col. 5, lines 17-24), including a spirally wound cylinder.

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The cited but not used art is directed to helically wound recording media.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to GERARD T. HIGGINS whose telephone number is (571)270-3467. The examiner can normally be reached on M-F 7:30am-5pm est. (1st Friday off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Callie Shosho can be reached on 571-272-1123. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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